

REMARKS

Claims 1-20 were pending at the time of the last office action. Applicant has canceled claim 14; amended claims 1, 7, 13, 15, 16, 19, and 20; and added claims 21-27. Thus, claims 1-13 and 15-27 are now pending.

Applicant would like to thank the Examiner for indicating that "Claim 1 would be found allowable if rewritten to include all the limitations of Claims 5 and 19." (Office Action, Sept. 10, 2007, p. 8.) Applicant has rewritten claim 19 to be in independent form and to include all the limitations of claims 1 and 5. Thus, applicant submits that claim 19 is allowable.

The Examiner rejected claim 13-18 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended claim 13 to address the Examiner's concerns.

The Examiner has rejected claims 7-12 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant has amended claim 7 to address the Examiner's concerns.

The Examiner has rejected claims 1-12 and 19-20 under 35 U.S.C. § 103(a) as being unpatentable over Mak, Jones, and Gong and claims 13-18 under 35 U.S.C. § 103(a) as being unpatentable over Jones and Gong. Although applicant disagrees, applicant has amended the claims to clarify the claimed subject matter.

According to applicant's technology, an operating system notifies a task that it is to be preempted from processor utilization or "swapped out." Upon receiving the notification, the task may perform any necessary processing in preparation for being swapped out and then indicate to the operating system that it is ready to be swapped out. The task may also notify the operating system that it is blocked, which means that it currently cannot use the processor productively. The operating system then swaps the task out. Eventually, the operating system will determine that the task can be swapped in. However, if the task

indicated that it was blocked, the operating system will defer the swapping in of the task until an event occurs that may cause the task to become unblocked.

The Examiner believes that Mak teaches "notifying a task ... that it is being preempted from utilizing the processor (column 4, lines 55-59)." (Office Action, Sept. 10, 2007, p. 4.) Applicant respectfully disagrees. The relied-upon portion of Mak describes conventional "preemptive scheduling wherein one task being performed is interrupted and switched with (preempted by) another more important task." (Mak, 4:57-59.) With such conventional preemptive scheduling a task is not notified that it is to be preempted. Rather, the operating system simply swaps out the task by interrupting the processing of the task being preempted, saving the context of that task, switching to the context of the new task, and starting the execution of the new task. At no point in this preemption process is the task notified "that it is being preempted" as recited by applicant's claims.

The Examiner also believes that Mak teaches "receiving an indication that the task is ready to be swapped out (column 5, lines 58-61)." (Office Action, Sept. 10, 2007, p. 4.) The actual language of claim 1, for example, is "receiving an indication from the task that the task is ready to be swapped out." With conventional preemptive scheduling as described in Mak, a task does not notify the operating system that is ready to be swapped out. Rather, the operating system, after deciding to swap out a task, simply swaps it out.

Independent claim 1 recites "notifying a task ... that the task is being preempted from utilizing the processor" and "receiving an indication from the task that it is ready to be swapped out." Independent claim 7 recites "a component that notifies a task ... that the task is to be preempted from utilizing the processor" and "a component that ... receives an indication from the task that it is ready to be swapped out." Independent claim 13 recites "receiving from an operating system an indication that the task is to be swapped out" and "sending an indication to the operating system that the task is ready to be swapped out." As discussed above, Mak neither teaches nor suggests such notifying and receiving by an operating system or receiving and sending by a task. In addition, applicant has amended

independent claim 1 to further clarifying the processing that leads to either swapping in of the swapped out task or deferring the swapping in of the swapped out task.

New claims 21 and 22 also recite such notifying of a task and receiving from the task. In addition, these claims recite "the task being blocked as a result of all streams assigned to the task executing virtual processor code."¹ Applicant can find nothing in the relied-upon references relating to streams assigned to a task, virtual processor code, or a task being blocked under such a condition.

New claim 23 recites such notifying of the task and receiving from the task. In addition, this claim recites "the task being blocked when all streams assigned to threads of the task are blocked."² Applicant can find nothing in the relied upon references relating to streams assigned to a threads or a task being blocked under such a condition.

New claims 24-27 recite such notifying of a task and receiving from the task. Claim 25 recites that "the task is blocked when all threads of the task are blocked," and claim 26 recites that "the task is blocked when all streams assigned to the task are executing virtual processor code." As discussed above, applicant can find nothing in the relied-upon references relating to such blocking of a task. Claim 27 recites that "the task is not blocked when a stream is executing virtual processor code to start a thread of the task." Applicant can find nothing in the relied-upon references relating to a task not being blocked under such a condition.

Applicant would like to bring to the Examiner's attention the claims of U.S. Patent Application No. 6,952,827, which issued from the application from which this application is a continuation. Some of those claims relate to swapping and indicating that a task is blocked.

¹ Support for this amendment can be found in ¶¶0052 and 00062 of the specification.
² Support for this amendment can be found in ¶0062 of the specification.

Based upon the above amendments and remarks, applicant respectfully requests reconsideration of this application and its early allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-8548.

Please charge any deficiency in fees or credit any overpayment to our Deposit Account No. 50-0665, under Order No. 324758001US2 from which the undersigned is authorized to draw.

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Respectfully submitted,

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